IN THE CLAIMS:

1. (Original) A variable reluctance resolver having a rotor which comprises a noncircular core and which is rotatably supported inside a stator with a gap therebetween, the shape of the rotor being such that the gap permeance, which is based on the gap, varies according to a sine function of the rotational angle, wherein each salient pole of the rotor has a center which is offset by a prescribed offset distance in the radial direction from the center of the rotor, and the outer peripheral shape of each salient pole comprises by an arc of a circle of radius r which is centered on the center of the salient pole and which does not extend to the inner peripheral surface of the stator.

2. (Original) A variable reluctance resolver as claimed in claim 1 wherein the shape of the rotor is defined in accordance with the rotational angle, which is expressed by the mechanical angle ϕ or the electrical angle θ corrected by the shaft angle multiplier, and the offset distance A such that the outer radius Rr of the rotor has a value given by the following equation:

$$Rr = A\cos\phi + \sqrt{r^2 - A^2\sin^2\phi} = A\cos(\theta/N) + \sqrt{r^2 - A^2\sin^2(\theta/N)}$$

wherein r is the radius of each salient pole, A is the offset distance, ϕ is the mechanical angle (ϕ = electrical angle θ/shaft angle multiplier N), θ is the electrical angle, and N is the shaft angle multiplier.

3. (Currently Amended) A variable reluctance resolver as claimed in claim 1 ~~or claim 2~~ wherein the shape of the rotor is defined in accordance with the rotational angle, which is expressed by the mechanical angle ϕ or the electrical angle θ corrected by the shaft angle multiplier, such that the gap δ between the stator and the rotor has a value given by the following equation:

$$\delta = R_s - A\cos\phi - \sqrt{r^2 - A^2\sin^2\phi} = R_s - A\cos(\theta/N) - \sqrt{r^2 - A^2\sin^2(\theta/N)}$$

wherein δ is the gap, Rs is the inner radius of the stator, A is the offset distance, ϕ is the mechanical angle (ϕ = electrical angle θ/shaft angle multiplier N), θ is the electrical angle, N is the shaft angle multiplier, and r is the radius of each salient pole.